

Title

A protective sleeve for a disc-shaped recording medium, such as a compact disc, a holder for a sleeve and an assembly of a holder and a sleeve.

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Background Of The Invention

The present invention relates to a protective sleeve for a disc-shaped recording medium, such as a compact disc, comprising sheets of a flexible material arranged in at least four layers on top of each other.

The invention further relates to a holder for a sleeve made of flexible sheet material.

The invention further relates to an assembly of such a holder and a sleeve made of flexible sheet material.

A protective sleeve of this art, though not intended for a disc-shaped recording medium, is known from WO 98/24640, which discloses a multi-pocket sleeve with three pockets. The sleeve is made up of a number of sheets and is used for a variety of paper recording applications. The side edge of the sleeve is provided with holes for inserting the sleeve in a sleeve holder. The sheets are of different sizes and are arranged in layers with the smallest as the front sheet, the second smallest as the second sheet etc. The bottoms of the pockets are situated at a common level.

US 5,595,293 discloses a foldable wallet for containing a disc such as a compact disc and accompanying graphics. The wallet contains four substantially rectangular sheets providing two integral pockets on top of each other and a separate third

pocket or one big pocket with two smaller pockets on top in a side-by-side arrangement. In the first case the two integral pockets are adapted for containing a compact disc as well as a cover. The third pocket is  
5 arranged for containing another cover and may be used for closing the wallet. The pocket for containing the compact disc is restricted by an arcuate seam binding the two sheets but not the third together. US 5,595,293 also disclose a method for making the wal-  
10 let including the arcuate seam.

US 6 241 086 discloses a sleeve for holding a digital video disc (DVD) and graphics. The sleeve comprise three sheets superposed each other and interconnected at a bottom edge and two side edges of  
15 the sleeve to provide two pockets: One for containing a DVD and one for containing the accompanying graphics. Due to the fact that the graphics accompanying DVDs are oversized in relation to the diameter of the DVD (DVD-diameter: 12.0 cm, length of DVD-graphics:  
20 17.8 cm) the DVD-containing pocket is oversized in relation to the DVD. To avoid that the DVD slides back and forth the DVD-containing pocket is provided with a disc stopping seal interconnecting the two sheets forming the DVD-containing pocket and retain-  
25 ing the disc in an end of the pocket adjacent an opening for insertion of the disc.

It should be noted that the so called jewel-case is a well known hard cover for compact discs comprising a bottom part holding a not readily remov-  
30 able graphic back sheet (dimensions: 11.8 cm x 15.0 cm) and the compact disc (diameter: 12.0 cm), and a hinged cover holding a readily removable graphic front cover or booklet (dimensions: 12.0 cm x 12.0

cm). However the term 'jewel-case' is used also for other hard boxes for containing disc shaped recording media e.g. DVDs. However cases used for DVDs has larger dimensions than cases used for CDs and also the accompanying graphics material has larger dimensions than the graphics material accompanying CDs. US 2,127,619 discloses a holder for holding groups of sheets, such as the chapters of a book. On one of their edges the sheets are provided with a key, which fits into a slot in the holder. The key is provided with a number of prolonged dovetail-shaped projections matching a number of prolonged projections in the slot so that the key may be easily inserted in the slot by pushing it into the slot and removed from the slot by displacement of the sleeve in a direction parallel to the edge provided with the key. This enables easy access to and browsing of the groups of sheets inserted in the holder.

US 5,433,480 discloses a binder system for binding booklets and the like, comprising a binder comprising a back with slots for receiving foldable spines attachable to the booklets. In one embodiment the slots contain full-length ridges or bosses for engagement with upstanding tabs on the spines to retain the spines. The binder system does neither provide for nor suggest direct attachment of sleeves of flexible material in the slots.

#### Brief Summary Of The Invention

It is a primary object of the present invention to provide a protective sleeve capable of containing the contents of a so called jewel case as mentioned above, in which a disc-shaped recording medium, such

as a compact disc, may be easily inserted and removed. A further object is to provide a protective sleeve, whereby several such sleeves in a practical manner may be inserted in a holder for easy access to  
5 and browsing of the recording media inserted in the sleeves.

It is another object of the invention to provide a holder for sleeves of flexible sheet material.

It is still another object to provide an assembly  
10 bly of a sleeve of flexible sheet material and a holder therefor.

According to a first aspect of the invention a protective sleeve for a disc-shaped recording medium having a diameter, such as a compact disc, said  
15 sleeve having a top, a bottom, a left side, a right side, a front and a back and comprising sheets of flexible material, the sheets being arranged in at least four layers on top of each other to provide in succession a back sheet, a first central sheet, a  
20 second central sheet and a front sheet, each sheet having a top edge, an opposing bottom edge and two mutually opposed side edges connecting the top edges and bottom edges, each respective sheet of said back sheet, first and second central sheet and front sheet  
25 being attached to an adjacent sheet along at least two opposing edges of said respective sheet so as to form a front pocket, a central pocket and a back pocket, the central pocket being open at the top edges and being adapted to contain said disc-shaped  
30 recording medium, wherein the bottom of the central pocket, determining the depth to which the disc-shaped recording medium may be inserted in the central pocket, is defined at a substantial distance

from the bottom edge of at least one of the sheets.

This provides for a protective sleeve with a front pocket for accommodating a front cover graphics or a booklet of a jewel case, a back pocket for accommodating a back cover graphics and a central pocket for accommodating a compact disc, whereby the compact disc, when inserted in the central pocket, the smaller depth of said pocket provides for a position of the compact disc at a relatively small distance from said top edges of the sheets, in which an edge of the disc is visible behind the front cover graphics or booklet thus making it easier for a user to pull the compact disc out of protective sleeve.

In one embodiment a protective sleeve according to the invention comprises at least four sheets of flexible material wherein each of said respective sheets is attached to its adjacent sheet(s) at the bottom edges and at at least one of the two side edges. Since all sheets are interconnected at the bottom of the sleeve this embodiment is relatively easy to manufacture.

In a second embodiment of a protective sleeve according to the invention the bottom edge of at least one of the first and second central sheet is situated between the bottom of the central pocket and the bottom edges of the front sheet and the back sheet and above an area of mutual attachment of sheets adjacent the bottom of the sleeve. In this embodiment at least one of the central sheets are not interconnected with the other sheets at the bottom of the sleeve. Therefore a seam at this part of the sleeve may be made more rapidly providing for a more efficient and more economical manufacture of sleeves.

In a third embodiment of a protective sleeve according to the invention a single piece of sheet material is folded to provide the first and the second central sheet said sheets being thus connected by  
5 a fold constituting the bottom edges of said sheets.

In a fourth embodiment of a protective sleeve according to the invention a bottom part of one of the first and the second central sheet is folded 180° towards and attached to the other of said central  
10 sheets.

The distance mentioned is preferably at least approximately 10 mm, preferably approximately 30 mm, and the disc-shaped recording medium projects in its position inserted in the central pocket over at least  
15 one of the two central sheets. Also preferably, the first central sheet may be provided at its top edge with a flap for engaging the edge of the disc-shaped recording medium in its position inserted in the central pocket, and the second central sheet may be pro-  
20 vided with a recess providing access to the disc-shaped recording medium in the central pocket. These features provide for a large area, in which a user may grasp the recording medium, without the recording medium being likely to fall out of the sleeve.

25 In preferred embodiments at least one of the sheets is manufactured from a transparent material, making a cover or any other graphic representation placed in one of the pockets visible through the sheet.

30 Furthermore, the sheets may be provided with substantially uniform and rectangular dimensions, and the sheets may be attached to respective adjacent sheets at both side edges in order to provide a



sleeve, in which all three pockets have their opening at the top edges of the sheets.

In a preferred embodiment fulfilling the above further object the sleeve is provided at the bottom 5 edges and/or the side edges with a fastening strip to provide for fastening the sleeve in a sleeve holder for holding several sleeves. The fastening strip may be a key, which is provided with a number of resilient projections. Thus, the fastening strip may be 10 fitted into a slot in the sleeve holder with projections matching the resilient projections. Alternatively or supplementary, the fastening strip may comprise a number of holes matching a number of rings in the sleeve holder. Thus, the protective sleeve(s) may 15 readily be inserted in and removed from the holder, while keeping a firm attachment of the sleeve(s) after insertion in the holder.

Preferably a reinforcement strip is included along the fastening strip. The reinforcement strip 20 will make the area of the sleeve adjacent the fastening strip more rigid thus facilitating insertion of the sleeve in a holder. The reinforcement strip is preferably made of a sheet material more rigid than the central sheets, e.g. due to the thickness of the 25 reinforcement strip being at least twice as big as the thickness of either central sheets.

In a preferred embodiment the protective sleeve is adapted to contain a front cover, a compact disc and a back cover of an ordinary jewel-case in the 30 front pocket, the central pocket and the back pocket, respectively. This makes it possible to place a collection of recording media into a holder, making the collection easy to browse, the covers of each re-

cording medium being visible through transparent sheets.

In a second aspect the invention suggests a flexible sleeve holder for holding sleeves of sheets  
5 of flexible material, comprising a flat bottom element with two opposing large surfaces, a first surface of said opposing surfaces carrying a plurality of parallel ribs each having two rib sides and forming between them sleeve receiving slots, said ribs  
10 carrying on at least one rib side and in a distance from the bottom element lateral projections, said projections leaving clearances in the slots.

The clearances are preferably less than 1.7 mm, preferably less than 1.2 mm and more preferably less  
15 than 1.0 mm.

Further the clearances are preferably greater 0.4 mm, preferably greater than 0.6 mm.

The bottom element may suitably be made from plastics material and will then have a certain resiliency due to the nature of the material. However from  
20 a practical consideration the bottom element may appear to be rigid.

In a third aspect the invention suggests an assembly comprising a sleeve of flexible sheet material  
25 and a flexible sleeve holder therefore, said sleeve comprising at least two layers of flexible sheet material interconnected to provide a pocket between them, said sleeve having an edge and being provided with a fastening strip along said edge, said fastening strip comprising a thickening strip and an en-  
30 gagement edge, said holder comprising a flat bottom element with two opposing large surfaces, a first surface of said opposing surfaces carrying a plural-



ity of parallel ribs each having two rib sides and forming between them sleeve receiving slots, said ribs carrying on at least one rib side and in a distance from the bottom element lateral projections, 5 said projections leaving clearances in the slots, said projections engaging said engagement edge to retain the sleeve releasably in the holder.

In one embodiment the engagement edge is provided by a resilient barb-like projection on the fastening strip. 10

In another embodiment the engagement edge is an edge of an elongated hole in the sleeve through or adjacent the thickening strip, said elongated hole extending along said edge of the sleeve.

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#### Brief Description Of The Several Views Of The Drawing

Examples of the invention will now be explained below with reference to the schematical drawings, in which

20 Fig. 1 is a front view of the protective sleeve according to the invention;

Fig. 2 is a cross sectional view taken along line II-II of Fig. 1;

25 Fig. 3 is a front view of a holder for insertion of the protective sleeve of Fig. 1;

Fig. 4 is a cross sectional view taken along line IV-IV in Fig. 3 with a number of the protective sleeve of Fig. 1 inserted in the holder of Fig. 3;

30 Fig. 5 is a front view of the preferred embodiment of a protective sleeve;

Fig. 5a shows a section along line A-A in Fig.5;

Figs. 5b and 5c are views corresponding to Fig.

5a but illustrating two variants of the sleeve;

Fig. 6 is an exploded view of the sleeve shown in Fig. 5;

Figs. 7 to 10 are respectively front view, side view, top and bottom view of a holder according to the invention;

Figs. 11 and 12 are two different perspective views of the holder shown in Figs. 7 to 10;

Figs. 14 to 16 are respectively front view, side view, bottom and top view of another embodiment of a holder according to the invention;

Fig. 16a is an enlargement of Fig. 16;

Fig. 17 is a front view showing a variation of the embodiment in Fig. 5;

Fig. 17a is a side view of the sleeve in Fig. 17;

Figs. 18a to 18e are section of a single slot indicating possible variations of the cross-section of the projections in the slots; and

Figs. 19a to 19e are front views of a single slot indicating possible variations in the longitudinal extent of the projections in the slots.

Fig. 1 and 2 show a protective sleeve in the form of a compact disc sleeve or CD sleeve 1 according to the invention. The CD sleeve 1 comprises a front sheet 2, a second central sheet 3, a first central sheet 4 and a back sheet 5, which are arranged in layers on top of each other as shown in Fig. 2. The sheets 2, 3, 4, 5 are made from a flexible, transparent plastics material, however the first central sheet 4 also comprises a lower part 4b made from a non-woven, flexible and soft plastics material. The sheets 2, 3, 4, 5 may comprise any other suitable ma-

terial.

The sheets 2, 3, 4, 5 are attached to their respective neighbouring sheet(s) 2, 3, 4, 5 at their side edges by means of an adhesive or welding and at their bottom edges by means of a weld 6 so as to form a front pocket 7, a central pocket 8 and a back pocket 9 of the CD sleeve 1. The sheets 2, 3, 4, 5 may be attached to each other in any other suitable way. The pockets 7, 8, 9 are open at the top edges and the sheets are of substantially rectangular shape.

In Fig. 2 the respective distances between the sheets 2, 3, 4, 5 are exaggerated in order to accentuate the pockets 7, 8, 9. In reality, the sheets 2, 3, 4, 5 are located much closer or even in direct contact with each other. Also, the relative thickness of the weld 6 is distorted; in reality the relative thickness is much smaller than what is implied in Fig. 2.

The front pocket 7 is adapted to contain the substantially quadratic front cover or booklet (not shown) of an ordinary compact disc jewel-case, thus the front sheet 2 has a somewhat lower top edge compared to the top edges of the other sheets 3, 4, 5. Preferably, the front pocket 6 has a depth corresponding to the height of such an ordinary front cover. The front cover is visible through the transparent front sheet 2.

The central pocket 8 is adapted to contain a recording medium in the form of an ordinary compact disc 10. In order to ease removal of the compact disc 10 from the central pocket 8, the second central sheet 3 and the first central sheet 4 are attached to

each other by means of a weld 11 in an arc-shaped line matching the lower edge of the compact disc 10, the weld 11 thus forming the bottom of the central pocket 8. The weld 11 is located at a substantial distance D from the bottom edge of the CD sleeve 1, the distance D providing a projection of the compact disc 10 over the top edge of the second central sheet 3 and the front sheet 2. Attachment of the sheets 3, 4 to each other may be of any other suitable kind and shape, or the offset bottom of the central pocket 8 may be provided in any other way.

The second central sheet 3 is provided with a recess 3a extending over the entire top edge of the sheet 3. This renders part of the compact disc 10 visible, making it easy for a user to slide the compact disc 10 upwards by means of e.g. a thumb, thus pulling the compact disc 10 out of the CD sleeve 1.

As indicated above, the first central sheet 4 comprises two parts, a smaller transparent top part 4a and the larger, non-woven and softer lower part 4b, the parts 4a, 4b being attached to each other by means of an adhesive, a welding or the like in an area 4c. The lower part 4b is adapted to protect the more vulnerable back part of the compact disc 10. The top part 4a comprises a flap 4d provided by a substantially semicircular cut 4e in the material of the top part 4a. This flap 4d may be used to secure the compact disc 10 in the CD sleeve 1 when the flap 4d is in the position shown in Figs. 1 and 2. The flap 4d may be released in an easy manner by gently pushing the top part 4a. Thus, the flap 4d provides for easy securing and release of the compact disc 10 in the central pocket 8.

The back pocket 9 is adapted to contain the rectangular back cover (not shown) of an ordinary compact disc jewel-case. Preferably, the back pocket 9 has a depth corresponding to the height of an ordinary jewel-case back cover. This makes it possible to watch the back cover through the transparent back sheet 5.

The CD sleeve 1 is provided with attachment means for securing it in a holder. The weld 6 is reinforced or thickened by a thickening strip 6a of a plastics material, which is welded onto the front sheet 2 along the bottom edge thereof. Areas at the upper side edge of the thickening strip 6a are left unwelded to the back sheet 5, whereby these areas provide resilient projections 12 made on the side of the weld 6, the resilient projections 12 being tapered in the direction of the bottom edge of the CD sleeve 1. The reinforced or thickened weld provides a key insertable in a slot and resilient projections 12 may then act as barbs. The attachment means further comprise holes 13.

In Fig. 3 an example of a holder 14 for holding several CD sleeves 1 is shown. A number of slots 15 are disposed in the holder 14. At their respective ends the slots 15 are provided with prolonged lateral projections 16.

In Fig. 4 a number of CD sleeves 1 are fitted into the holder 14 of Fig. 3, the respective welds 6 of the CD sleeves 1 forming keys fitting into the slots 15. The weld of the respective CD sleeves 1 may be pushed into the respective slots 15, the respective tapered resilient projections 12 clicking into a fit beyond the lateral projections 16 of the holder

14. In succession to a small lateral movement in a direction parallel to their keys and past the lateral projections 16 the respective CD sleeves 1 may be pulled individually out of the holder 14. A thickening strip and resilient projections 12 may be provided on one side or on both sides of the respective CD sleeves 1.

Figs. 5 and 5a show the preferred embodiment of the sleeve according to the present invention. Fig. 6 shows an exploded view of the sleeve in Figs 5 and 5a. Thus in these figures a CD sleeve 101 comprises a front sheet 102, a second central sheet 103, a first central sheet 104 and a back sheet 105. The first central sheet comprises a top part 104a and a lower part 104b. The CD sleeve 101 has a top 121, a bottom 122, a left side 123, a right side 124, a front 125 and a back 126. The CD sleeve 101 also comprises a reinforcement strip 127 of sheet material. Finally a thickening strip 106a is included.

The front sheet 102, the two central sheets 103 and 104, the back sheet 105 and the reinforcement strip 127 all extend the full width of the CD sleeve 101 and they are attached to their respective adjacent sheets or strip at the left and right side 123 and 124 of the CD sleeve 101. However not all sheets extend the full length from the bottom 122 to the top 121 of the CD sleeve 101, and thus for one sheet the adjacent sheet may be one at the bottom 122 and another at the top 121.

In a bottom weld 106 the front sheet 102, the first central sheet 104, the back sheet 105 and the thickening strip 106a are welded together to form a key, as also explained with reference to Figs. 1 and



2 in relation to the first embodiment. As with the first embodiment areas are left out of the welding, whereby the thickening strip 106a in these areas provides barb-like resilient projections 112. The bottom 5 weld 106 and the barb-like resilient projections 112 may cooperate with a holder as explained below.

Above the bottom weld 106 circular holes 113 are provided for insertion of ordinary rings of a ring binder to allow the CD sleeve 101 to be stored 10 therein.

The two central sheets 103 and 104 are attached to each by an arc-shaped weld 111.

The CD sleeve 101 is thus provided with a front pocket 107 between the front sheet 102 and the second 15 central sheet 103, a central pocket 108 between the two central sheets 103 and 104 and a back pocket 109 between the back sheet 105 and the first central sheet 104.

The depth of the central pocket 108 is defined 20 by the arc-shaped weld 111. The depth of the central pocket 108 should be understood as the distance a CD may be inserted into the central pocket. Thus it should be understood that the arc-shaped weld may in variants comprise welds, in which are welded together 25 parts of the two central sheets anywhere along a circular arc adjacent the lower part of the perimeter of a CD inserted in the pocket, cf. Fig 1.

The front pocket 107 and the back pocket 109 both extend below the central pocket 108 to be re- 30 stricted by a second bottom weld 128 provided above the holes 113. The second bottom weld 128 restricts items inserted in the front or back pocket from blocking the holes 113.

The reinforcement strip 127 extends between and is free of the arc-shaped weld 111 and the second bottom weld 128.

There is an overlap between the reinforcement strip 127 and the second central sheet 103, which is preferred because it facilitates the insertion of a piece of graphics material, such as a front cover or a booklet, in the front pocket 107 by excluding a risk of the piece of graphics material colliding with the upper edge of the reinforcement strip 127.

The area of the CD sleeve 101 below the second bottom weld 128, i.e. the bottom weld 106 and the strip-shaped area comprising the circular holes 113, constitutes a fastening strip for fastening the CD sleeve 101 in a holder or binder. The reinforcement strip 127 is provided along the fastening strip to prevent the bottom area of the CD sleeve 101 from collapsing when the fastening strip is inserted into a holder as will be described in more detail below. It should be noted that the fastening strip and the reinforcement strip could be placed at one of the sides 123 or 124 of the CD sleeve 101 instead of being placed at the bottom 122.

In Fig. 5 all sheets are shown as being transparent. However only the front sheet 102 and the back sheet 105 are preferred to be transparent. The other sheets may be transparent or they may be opaque and they may have a colour e.g. black.

The top part 104a of the first central sheet 104 is provided with cut 104e to provide a flap 104d as described with reference to Fig. 1. The lower part 104b is preferably made from a soft non-woven to protect a CD from being scratched as it is commonly used

in sleeves for CD's. The top part 104a and the lower part 104b are attached to each other in an area 104c as described with reference to Fig. 1.

The embodiment shown in Fig. 5 is preferred over the first embodiment shown in Fig. 1 because it may be produced at a higher rate due to the fact that the bottom weld 106 is thinner because the second central sheet 103 is not included. Thus the bottom weld 106 may be welded at a higher rate than the bottom weld 6.

The sleeve 106 is preferably dimensioned to accommodate the items normally accommodated in a CD jewel case. That is a CD with a diameter of 12.0 cm, a graphics back cover with length x width: 15.0 x 11.8 cm and a graphics front cover or booklet with length x width: 12.0 x 12.0 cm.

Fig. 5b indicates a variant of the sleeve of the invention. A second central sheet 103a is folded towards the first central sheet 102 and is attached thereto by a central weld 130. In this way a fold 131 defines the depth of the central pocket 108. Other features of this variant correspond to features of the CD sleeve shown in Figs. 5 and 5a.

Fig. 5c indicates another variant of the sleeve of the invention. A single piece of sheet material is folded to provide a first central sheet 102b and a second central sheet 103b. The two central sheets are connected through a fold 131a, which defines the depth of the central pocket 108. Other features of this variant correspond to features of the CD sleeve shown in Figs. 5 and 5a.

Figs. 7 to 12 and Figs. 13 to 16a show two practical embodiments of a holder corresponding to

the holder 14 in Figs 3 and 4.

Thus Figs. 7 to 12 show a holder 214 and Figs. 13 to 16a show a holder 314. The two holders 214 and 314 both comprise a holding part 24 with slots 25 and lateral projection 26. The holding parts 24 will therefore be described with reference to any of Figs. 7 to 12 and 13 to 16a.

The holding part 24 is preferably a plastics moulding and comprise a flat bottom element 27 carrying a plurality of parallel ribs 28 forming between them the slots 25 opening in a face of insertion 29. In the embodiment shown in Figs 7 to 16a ten slots 25 are provided side-by-side providing for insertion of ten sleeves side-by-side in the face of insertion 29.

Inside the slots 25 on rib sides are provided lateral projections 26 leaving between them clearances 30 (Fig 16a). The lateral projections 26 have lower sides 31 proximal to the bottom element 27 or the bottoms of the slots 25 and upper sides 32 distal from the bottom element 27 or the bottoms of the slots 25. As shown in Fig 16a the upper sides 32 in one slot 25 are convergent in a direction 33 towards the bottom element 27 said direction 33 being also a direction of insertion of sleeves in the holding part 24. As also shown in Fig 16a the lower sides 31 extend perpendicular to the direction 33.

In the embodiment of the holding part 24 the slots 25 are open in one longitudinal end 34 while in a opposite second longitudinal end 35 they are from a practical point of view closed by a transverse rib 36.

In Figs. 7 to 12 the holder 214 is provided on the side opposite to the face of insertion 29 with a

mounting member in the shape of a tongue 37 extending parallel to the bottom element 27. For mounting the holder e.g. on a wall the tongue may be hooked over the edge of a mounting plate on the wall (not shown).

5        Further the holder 214 is provided with a head 38 with provision for written indices 39 relating to the contents of CD in sleeves to be inserted in the holder. The head 38 is provided with a spring of metal thread comprising a straight part 39 extending  
10 as a movable bar across the open first longitudinal ends 34 of the slots 25. The straight part 39 may be pressed down towards the head 38 to clear the open first longitudinal ends 34 of the slots 25.

In Figs. 13 to 16 the holder 314 is provided on  
15 the side opposite to the face of insertion 29 with a mounting member in the shape of cams 40 and a catch 41 for releasable mounting on a plate shaped mounting element provided e.g. on a wall or in a binder (not shown).

20        The holding part 24 may receive a CD sleeve 101, which has its fastening strip, key or weld 106 inserted into one of the slots 25 in the direction of insertion 33. The resilient projections 112 of the CD sleeve 101 will flex, also the ribs 28 of the holding  
25 part 24 may flex, as the weld 106 slides over the upper sides 32 of the lateral projections 26 to allow the resilient projections 112 and the weld 106 to pass between said lateral projections 26. Then the different elements will flex back and the barb-like  
30 resilient projections 112 will engage the lower sides 31 of the lateral projections 26 in the respective side of the slot 25 resisting attempts to withdraw the CD sleeve 101 from the slot 25 in the opposite

direction to the direction of insertion 33. The CD sleeve may however be released from the holding part 24 by moving the CD sleeve 101 in the longitudinal direction through the open end of the slot 25, possibly after the straight part 39 has been lowered in case of holder 314.

A number of modifications are possible, some of which shall be explained in the following.

Referring to Figs. 17 and 17a a variant of the fastening strip is shown. Instead of the resilient projections and circular holes described with reference to Fig. 5 two elongated holes 45 are provided through a CD sleeve 201 adjacent a bottom weld 206. A thickening strip corresponding to the thickening strip 106a is preferably present in this variant.

Provided that the respective dimensions suffice the CD sleeve may be received in a slot 25 in the holding part 24 described above. In lack of a resilient projection on the fastening strip the ribs 28 must in this case flex to allow the weld 206 to pass between the lateral projections 26.

However in the latter case and with the embodiment of the lateral projections shown in Figs. 7 to 16 it will be difficult to release the CD sleeve 201 from the holding part 24. Thus as especially shown in Figs. 7 and 13 one longitudinal end 46 of the lateral projections is rounded or tapered while the opposite second longitudinal end 47 is blunt. At an attempt to move the CD sleeve 201 towards the open longitudinal end of the slot 25 the blunt ends of the lateral projections 26 will catch the material of the CD sleeve 201 surrounding the elongated holes 45 impeding movement.



Figs. 18a to 18e illustrates some different possible cross-sections of the slots and the lateral projections.

Fig. 18a suggests that the lower sides of the lateral projections may be convergent in a direction opposite to the direction of insertion to provide for withdrawal of a sleeve in the direction opposite to the direction of insertion. A certain force must be applied to make the bottom weld slide over the lower sides and force the ribs apart to allow the bottom weld to pass.

When withdrawal of the sleeve in the direction opposite to the direction of insertion is possible the slots of the holding part may be closed in both longitudinal ends. When the slots are closed in both longitudinal ends it is avoided that sleeves may unintentionally slide out of an open end of a slot.

Fig 18b suggest that a single lateral projection is provided. This would e.g. provide for only one orientation of the CD sleeve 101 because the resilient projections must meet the lateral projection in order to ensure a fastening engagement.

As indicated in Fig. 18c a spring element 50 may be present in a slot with lateral projections in only one side to force e.g. the elongated hole 45 of CD sleeve 201 into engagement with the lateral projection.

A corresponding effect may be obtained as suggested in Fig. 18d where the spring element 50 is so to speak substituted by a guide element 51 guiding the bottom weld of a sleeve during insertion. In this case inherent flexibility of the material of the sleeve will substitute the action of the spring ele-

ment 50.

Finally Fig. 18e illustrates that the lateral projections in a slot need not be identical. In this embodiment an asymmetry is obtained providing for 5 different characters of the engagement between lateral projections and the fastening strip of a sleeve. In this case the CD sleeve 101 may be withdrawn from the slot in the direction opposite to the direction of insertion 33 if the resilient projection 112 en- 10 gages a lateral projection 26a the lower side of which has a steep slant, whereas such withdrawal may be impeded if the resilient projection 112 engages another lateral projection 26b with a lower side with a flat or missing slant.

15 Figs. 19a to 19e illustrates different longitudinal extends of the lateral projections 26.

Fig. 19a suggests two sets of opposing lateral projections with blunt ends.

Fig. 19b suggests three sets of opposing lateral 20 eral projections. This embodiment may e.g. be use full in case of larger sleeves than the sleeves describes above.

Fig. 19c indicates an embodiment in which the lateral projections extend in substantially the full 25 length of the slot. This embodiment is not use full with sleeves where the fastening strip comprises elongated holes instead of resilient projections.

Fig. 19d shows the embodiment also shown in Figs. 7 and 13 where the lateral projections comprise 30 one blunt and one tapered or rounded longitudinal end.

Fig. 19e suggests that lateral projections are tapered or rounded in both longitudinal ends.

As mentioned above the dimensions must suffice if a sleeve shall be able to be mounted in a holding part.

In a preferred embodiment the CD sleeve 101 5 comprise front sheet 102 and back sheet 105 of thickness approximately 0.12 mm and thickening strip of thickness approximately 0.4 mm including also the first central sheet 104 the weld 106 has a thickness of approximately 0.85 mm the resilient projections 10 112 extending some 0.1 mm above that. To cooperate with this CD sleeve a holding part 24 with a clearance of approximately 0.8 mm between the lateral projections has provided satisfactory results. However the thickness of the sleeves and the clearance 15 between the lateral projections may vary within the scope of the claims.

The reinforcement strip is in preferred embodiment of a more rigid sheet material than the front, back and central sheets and has e.g. a thickness of 20 approximately 0.3 mm.

The size of the clearance between the lateral projections, or between the lateral projection and the opposing rib side in case of slots with unilateral projections, cf. Fig. 18b, should be adapted to 25 the sleeves intended for mounting in the holder. In case of sleeves with elongate holes for engagement with the lateral projections, cf. Fig. 17, the clearance should allow the ribs defining a slot to flex through the clearances of the adjacent slots. Thus 30 the clearance should be at least one third of the thickness of the fastening strip of the sleeves in question (or vice versa). On the other hand the clearance should of course be less than the thickness

of said fastening strip, unless other means are provided for ensuring engagement between the lateral projections and fastening strip, cf. Figs 18c and 18d.

5           In case of a light sleeve intended for containing e.g. a single sheet of paper it is envisaged that the fastening strip may comprise only two sheet of approximately 0.1 mm thickness i.e. the fastening strip may be only approximately 0.2 mm thick. In this  
10 case the clearance may be e.g. approximately 0.1 mm.

The scope of the present invention is not limited to the above examples and preferred embodiments. Variations further to the above mentioned would be obvious to the person skilled in the art.

15           The CD sleeve may be modified to contain two CDs within the scope of the following claims. Referring to Fig. 5 the sleeve may e.g. be modified by inserting an additional sheet between the back sheet 105 and the first central sheet 104 thus providing a  
20 pocket for a graphics back cover between the back sheet 105 and the additional sheet and providing a pocket for a second CD between the first central sheet 104 and the additional sheet. The depth of the pocket for the second CD should be restricted like  
25 the central pocket 108 e.g. by incorporating the additional sheet in the arc-shaped weld 111. In this modified sleeve the single central flap 4d could be substituted by two flaps placed side-by-side thus providing a flap for each CD. Another possibility  
30 would be to provide a small flap inside a bigger flap.